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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,112	08/23/2004	Yasuo Uemura	028567-0133	7913

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FOLEY AND LARDNER LLP
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EXAMINER

SMITH, CAROLYN L

ART UNIT	PAPER NUMBER
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1631

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/500,112

Applicant(s)

UEMURA ET AL.

Examiner

Carolyn L. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-48 is/are pending in the application.
- 4a) Of the above claim(s) 26-36, 38-42 and 44-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25, 37 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06252004, 10202004, 11202006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' election of Group II (claims 2, 14, 20), filed 5/2/07, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Cancelled claims 1-24 and new claims 25-48, filed 5/2/07, are acknowledged. Applicants state new claims 26, 38, and 44 read on original claims 2, 14, and 20. This statement is incorrect as new claims 25, 37, and 43 read on original claims 2, 14, and 20. Newly submitted claims 26-36, 38-42, and 44-48 are directed to inventions that are independent or distinct from the invention originally claimed for the following reasons: Claims 26-36, 38-42, and 44-48 are drawn to subject matter from non-elected Groups (see original restriction, mailed 4/2/07) that were cancelled. Accordingly, claims 26-36, 38-42, and 44-48 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The present title is directed to an RNA sequence analyzer, and RNA sequence analysis method, program, and recording medium, whereas in contrast the elected claims are specifically directed to an RNA sequence analyzer, computer program product, and computer readable recording medium.

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR § 1.821 (a)(1) and (a)(2). See for example, Figures 2, 17, and 21 and pages 46, 47, and 61 of the specification. However, this application fails to comply with the requirements of 37 CFR § 1.821 through 1.825, because it

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lacks a paper copy, computer readable form, or CD-ROM and SEQ ID Nos cited along with each sequence in the specification or Figures. Applicants are also reminded that SEQ ID Nos are not required in Figures per se, however, the corresponding SEQ ID Nos then are required in the Brief Description of the Drawings section in the specification. Applicant(s) are required to submit a computer readable form sequence listing, and a paper copy, or CD-ROM incorporated by reference into the specification, statements under 37 CFR § 1.821 (f) and (g). Applicant(s) are given the same response time regarding this failure to comply as that set forth to respond to this office action. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully respond to this Office Action.

Claims herein under examination are 25, 37, and 43.

Claims Rejected Under 35 U.S.C. § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25, 37, and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 25 (lines 4-5), 37 (lines 5-6), and 43 (lines 5-6) recite the limitation "the one or more grammars". There is insufficient antecedent basis for this limitation in these claims. While there is previous mention of a single grammar, there is no previous mention of "one or more grammars". Clarification of this issue via clearer claim wording is requested.

Claims 25 (line 8), 37 (line 9), and 43 (line 9) recite the limitation "the RNA sequences". There is insufficient antecedent basis for this limitation in these claims. While there is previous mention of a "one or more" RNA sequences, there is no previous mention of only plural sequences. It is unclear if Applicants intend to exclude the "one" RNA sequence from this limitation. Clarification of this issue via clearer claim wording is requested.

Claim Rejections – 35 USC §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25, 37, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (Pac Symp Biocomput., 1996, pages 109-125).

Brown et al. disclose RNA pseudoknot modeling using grammars and performing database searches to find RNA sequences which resemble RNA pseudoknots (title and abstract) which represents RNA sequence analyzing. Brown et al. disclose searching databases for pseudoknotted RNA structures, finding full sequence under full pseudoknot grammar, and using stochastic context free grammars to model RNA structure (abstract; page 109, last paragraph; page 110, third paragraph; page 116, first paragraph; page 117, second paragraph; page 122, last paragraph) with correspondence between a grammar and RNA secondary structure (page 111, fifth paragraph), and storing locations (section 2.4) which represents grammar storage of instant

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claims 25, 37, and 43. Brown et al. disclose using a parsing algorithm and parse trees (page 111, second paragraph; Figure 2 and caption) which represents a parsing unit, as stated in instant claims 25, 37, and 43. Brown et al. disclose computing estimates with the Tree-Grammar EM training algorithm which uses trees (page 118, fourth paragraph), computing probabilities involving the parses and using efficient grammar parses to score the sequences under the full pseudoknot grammar (section 2.4), and using Bayes decision theory for hypothesis testing (section 2.5) which represents goodness-of-fit calculating of instant claims 25, 37, and 43. Brown et al. disclose computer science and biology have collaborated to design filters which sieve through data and return only those precious sequences for which the filters were designed (page 109, third paragraph), finding RNA sequences which resemble RNA pseudoknots that bind biotin (abstract), and successfully discriminating biotin binding RNA from random RNA sequences (section 4) which represent outputting RNA sequences, as stated in instant claims 25, 37, and 43. Brown et al. disclose algorithms and software (page 118, second fourth paragraphs) which represent an analyzer (i.e. program) and computer program product, and computer readable recording medium which inherently make a computer execute a method.

Thus, Brown et al. anticipate the instant invention.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The

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faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR §1.6(d)). The Central Fax Center number for official correspondence is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (571) 272-0721. The examiner can normally be reached Monday through Thursday from 8 A.M. to 6:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571) 272-0735.

July 10, 2007

/Carolyn Smith/
Primary Examiner
AU 1631